

Remarks**I. Telephone Message**

The applicants appreciate the telephone message received from the Examiner on October 16, 2006 in response to an earlier inquiry by the applicants. The rejection under 35 U.S.C. 112, which is addressed below, was discussed briefly for the purpose of clarifying certain language in the Office Action.

II. Status

Claims 1-5 and 10-42 are pending in the application. Claims 1, 5, 10, 14-16, 18, 29, 32, and 34 are amended. Claims 35-42 are added.

III. Claim Rejections - 35 U.S.C. § 112

Claims 10-24 and 32-34 have been rejected under 35 U.S.C. 112 as allegedly failing to comply with the written description requirement. Claims 10, 14-16, 18, 32 and 34 have been amended, and the rejection is respectfully traversed.

The Office Action alleges that the elements “first processor” and “second processor” as recited in claims 10, 18 and 32 are not described in the Specification. (Office Action, page 3). The applicants respectfully disagree and submit that these claim elements are clearly described in the Specification.

In the example described in the Specification, the “first processor” and the “second processor” both comprise a respective computer. The first claimed processor is supported by the “client computer,” which includes and is controlled by the “first software program,” as described at page 7, line 7. The second claimed processor in this example is supported by the “storage management system 150,” which “may be realized using a storage server,” as described at page

6, lines 6-12. The “storage management system 150” includes the “storage manager 155,” which is “typically software.” (Page 6, line 6-7). The Specification additionally explains that the “second software program can be storage manager 155.” (Page 7, line 10). It would have been apparent to one of ordinary skill in the art that the software programs could be run by the same computer or other such processor, as well.

Therefore, it is respectfully submitted that the rejection of amended claims 10-24 and 32-34 under 35 U.S.C. 112 should be withdrawn.

IV. Claim Rejections - 35 U.S.C. § 102

Claims 1-2, 10-11, 13, 18, 20, 25-26, 28-29, 31-32, and 34 have been rejected under 35 U.S.C. 102(e) as being allegedly anticipated by U.S. Patent No. 6,665,779 (“Polfer”). Claims 1, 10, 18, 29, 32 and 34 have been amended and the rejection is respectfully traversed.

Amended independent claim 1 defines a method for replicating data from a storage device. Claim 1 has been amended to require “performing at least one read operation with respect to at least one data block on a storage device based, at least in part, on information in a file system associated with the storage device.” Claim 1 also requires “recording one or more I/O accesses performed with respect to the storage device in association with the at least one read operation,” “identifying, based on the recorded I/O access information, one or more data blocks on the storage device that contain valid data,” and “replicating the data blocks that contain valid data.” Independent claim 10 is a system claim corresponding to claim 1, and has been amended in a similar manner. Claims 14-17 have been amended to conform to the language of amended claim 10. Support for the amendments to claims 1 and 10 is found at page 5, lines 7-12, and at page 8, lines 8-11, for example. Claims 18, 29 and 32 have been similarly amended.

Polfer discloses a method for backing up data from a storage device. The storage device's file system maintains a file allocation table ("FAT") to record where valid data is stored on the storage device. (Col. 6, lines 15-20). As is known in the art, a FAT is created when the storage device is formatted, and is continually updated as data is written or deleted from the storage device. In accordance with Polfer, the FAT is examined, and a block map or file is generated based on the FAT in order to indicate whether selected blocks include valid data to be backed up. (Col. 6, lines 15-18). Specifically, the block map is generated by examining the FAT and setting flags indicating whether or not each of the selected blocks contains valid data. (Col. 6, lines 20-29). As a result, the block map includes an entry for each of the selected blocks to indicate whether the associated block has any data to be backed up. (Col. 6, lines 18-20). The applicants wish to emphasize that the block map is created by reading the FAT, not by reading the data blocks themselves.

Subsequently, the block map is traversed and only those blocks that contain data to be backed up as indicated in the block map are backed up from the partition. (Col. 6, lines 33-35). Again, the applicants wish to point out that Polfer "reads" the block map (not the data blocks themselves) and then backs up selected data blocks based on information in the block map. The block map is not a data block.

Accordingly, Polfer does not teach or suggest "performing at least one read operation with respect to at least one data block on a storage device based, at least in part, on information in a file system associated with the storage device" and "recording one or more I/O accesses performed with respect to the storage device in association with the at least one read operation," as required by amended claim 1, or a processor configured to do so, as required by amended

claim 10. The system described in Polfer does not teach or suggest reading allocated data blocks, and recording I/O accesses performed while reading, as claimed.

Accordingly, amended claim 1 and its dependent claims (2-4), and amended claim 10 and its dependent claims (11-17), are patentable over the cited art. For the same reasons, independent claims 18, 29 and 32, and the claims that dependent upon them, are also patentable over the cited art.

V. Claims Rejections - 35 U.S.C. § 103

A. Claims 3, 12, 21 and 27

Claims 3, 12, 21 and 27 have been rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Polfer in view of U.S. Patent Application No. 2003/0195865 (Long). The rejection is respectfully traversed.

Claim 3 depends from amended independent claim 1. Claim 12 depends from amended independent claim 10. Claim 21 depends from amended independent claim 18. Claim 27 depends from amended independent claim 5. For the reasons set forth herein, amended claims 1, 5, 12 and 18 are patentable over the cited art. (Amended independent claim 5 is discussed below). Therefore, claims 3, 12 and 21 are also patentable over the cited art.

B. Claims 4-5, 14-17, 19 and 22-24

Claims 4-5, 14-17, 19 and 22-24 were rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Polfer in view of U.S. Patent No. 5,668,971 ("Neufeld"). The rejection is respectfully traversed.

Claim 4, which depends from amended independent claim 1, is allowable because amended claim 1 is patentable over the cited art, as discussed above.

Amended independent claim 5 contains certain limitations similar to those of amended claim 1. For example, amended claim 5 requires “performing at least one read operation with respect to at least one data block on a storage device based, at least in part, on information in a file system associated with the storage device,” and “causing the storage device to record one or more I/O accesses performed with respect to the storage device in association with the at least one read operation.” As discussed above, Polfer does not teach or suggest these limitations. Neufeld also fails to teaches or suggests these limitations. In addition, Polfer and Neufeld in combination do not teach or suggest these limitations. Therefore, claim 5 is also patentable over the cited art.

Claims 14-17, which depend from amended claim 10, are allowable because amended claim 10 is allowable, as discussed above.

Claims 19 and 22-24, which depend from amended independent claim 18, are allowable because amended claim 18 is allowable, as discussed above.

C. Claims 30 and 33

Claims 30 and 33 have been rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Polfer in view of U.S. Patent No. 6,757,778 (“Rietschote”). The rejection is respectfully traversed.

Claim 30, which depends from amended independent claim 29, is allowable because amended claim 29 is allowable, as discussed above. Claim 33, which depends from amended independent claim 32, is allowable because amended claim 32 is allowable, as discussed above.

VI. New Claims 35-42

New claims 35-37 depend from amended claim 10. For the reasons set forth above, amended claim 10 is patentable over the cited art. Therefore, new claims 35-37 are also patentable over the cited art.

New independent claim 38 defines a method for replicating data from a storage device. Claim 38 requires “receiving a message to replicate data stored on a storage device,” and “in response to the message, storing in a file information identifying one or more data blocks on the storage device containing valid data.” New claim 38 further requires “replicating one or more data blocks stored on the storage device, based on the information in the file.” Support for new claim 38 is found at pages 7-9, for example.

None of the cited art teaches or suggests the combination of new claim 38. For example, the cited art does not teach or suggest “receiving a message to replicate data stored on a storage device,” and “in response to the message, storing in a file information identifying one or more data blocks on the storage device containing valid data.” While Polfer generates a block map indicating the locations of valid data, Polfer does not disclose doing so in response to a “message,” as required by amended claim 38. Therefore, new claim 38 is patentable over the cited art.

New claim 39 depends from claim 38, and further comprises “recording, in the file, one or more I/O accesses performed by the storage device.” New claim 40 depends from claim 39, and recites “wherein the message comprises a request to record I/O accesses performed by the

storage device.” New claim 41 depends from claim 40, and further comprises “receiving a second message to stop recording I/O accesses performed by the storage device.”

For the reasons discussed above, new claim 38 is patentable over the cited art. Therefore, new claims 39-41, which depend from new claim 38, are also patentable over the cited art.

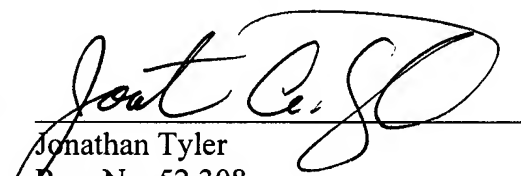
New independent claim 42 is a system claim that is similar to new claim 38. For the reasons set forth above, new claim 38 is patentable over the cited art. Therefore, new claim 42 is also patentable over the cited art.

VII. Conclusion

In view of the foregoing, each of claims 1-5 and 10-42, as amended, is believed to be in condition for allowance. Accordingly, reconsideration of these claims is requested and allowance of the application is earnestly solicited.

Respectfully submitted,
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